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ABSTRACT

Drawing upon research into the nature of the English writing system and about the development of spelling ability, this booklet presents an approach to improving spelling and vocabulary at the secondary school level based on a knowledge of the fabric of the language itself. The first section of the booklet reviews theory and research concerning the structure of English orthography, how people learn to spell, and orthographic implications for instruction. The second section explores word forms and letter constraints and the relationships between and among words, and discusses how new words enter the language and the importance of using a dictionary while proofreading to ensure correct spelling and consequently correct meaning. The booklet concludes with a selected bibliography for teachers and students. (HTH)

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Improving Spelling and Vocabulary in the Secondary School

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Foreword

The Educational Resources Information Center (ERIC) is a national information system developed by the U.S. Office of Education and now sponsored by the National Institute of Education (NIE). It provides ready access to descriptions of exemplary programs, to reports on research and development efforts, and to related information useful in developing effective educational programs.

Through its network of specialized centers or clearinghouses, each of which is responsible for a particular educational area, ERIC acquires, evaluates, abstracts, and indexes current information and lists that information in its reference publications.

The ERIC system has already made available—through the ERIC Document Reproduction Service—a considerable body of data, including all federally funded research reports since 1956. However, if the findings of educational research are to be used by teachers, much of the data must be translated into an essentially different context. Rather than resting at the point of making research reports easily accessible, NIE has directed the separate ERIC clearinghouses to commission information analysis papers in specific areas from recognized authorities in those fields.

As with all federal educational information efforts, ERIC has as a primary goal bridging the gap between educational theory and classroom practice. One method of achieving that goal is the development by the ERIC Clearinghouse on Reading and Communication Skills (ERIC/RCS) of a series of booklets designed to meet concrete educational needs. Each booklet provides teachers with a review of the best educational theory and research on a limited topic followed by descriptions of classroom activities that will assist teachers in putting that theory into practice.

The idea is not unique. Several educational journals and many commercial textbooks offer similar aids. The ERIC/RCS booklets are, however, noteworthy in their sharp focus on educational needs and their pairing of sound academic theory with tested

classroom practice. And they have been developed in response to the increasing number of requests from teachers to provide this kind of service.

Topics for these booklets are recommended by the ERIC/RCS National Advisory Board. Suggestions for topics are welcomed by the Board and should be directed to the Clearinghouse.

Bernard O'Donnell
Director, ERIC/RCS

1 Theory and Research

The noted historian James H. Breasted once observed that "the invention of writing and of a convenient system of keeping records on paper has had a greater influence in uplifting the human race than any other intellectual achievement in the career of man" (Breasted 1938, p. 61). This influence, of course, was a direct result of the capacity of writing to record the accumulating cultural heritage so that it could be transmitted across distances and to future generations. In a very real sense, writing was the wellspring that enabled modern civilization to grow and flourish.

Writing often conveys more than its intended message, however; it may also offer subjective information about the writer—his or her social and educational background and quality of thought, among other attributes. Spelling—the mechanism by which language is converted to writing—contributes to these subjective impressions because misspellings are visible, readily identifiable features of written discourse. Whether or not these impressions are warranted, poor spelling can have unfortunate consequences in school, vocational, and personal life.

Yet, the importance attributed to spelling in the larger society is seldom matched by the time and effort given to its study in the school curriculum. Why is this the case? One reason is that spelling has traditionally been relegated to the elementary school curriculum and, in turn, regarded as involving little intellectual effort other than rote memory. A second reason is that the teaching of spelling has generally received scant attention in the professional preparation of teachers. As a result, teachers tend to teach spelling in much the same way that they were taught to spell, and many present-day instructional practices are, in reality, cultural artifacts.

In *Learning to Spell*, my earlier publication in the TRIP series, spelling instruction in the early elementary school was discussed in a very different way. Instead of being regarded as the product of rote memory, spelling ability was described as a complex intellectual accomplishment in which word knowledge is de-

veloped over time from many and varied experiences with written language—in short, as a developmental process that continues into adulthood. Indeed, as indicated by emerging research findings which I will describe shortly, some aspects of orthography are probably *best* learned in later school years when instruction can draw upon the greater intellectual maturity of students and their more extensive experiences with written language. From this point of view, then, spelling ability rests to a large degree on a knowledge of the fabric of language itself; rather than being the bland subject it is often thought to be, spelling can be a voyage into a fascinating and beneficial study of our language.

Before exploring how spelling can be presented in this manner, we need to examine briefly two areas where important evidence is accumulating with consequences for spelling instruction. The first of these is how our writing system is structured; the second, how a knowledge of this structure appears to develop, particularly in later school years. We will begin by comparing characteristics of the English writing system to those of other writing systems and then consider recent insights into the development of spelling ability in later school years.

The Structure of English Orthography

Whenever we write, we engage in the process of spelling, the act of transforming our thoughts into a visual record by placing graphic symbols, or graphemes, on a writing surface. Writing, as Breasted observed, is one of our great accomplishments, for it makes possible the preservation of accumulated wisdom and its transmission to future generations. How writing developed is a fascinating story in its own right, but one whose telling is beyond the scope of this booklet. Nevertheless, a brief account of the different kinds of writing systems that have been developed helps us to understand more clearly the advantages and the limitations of our own written code.

Every writing system, or orthography, is made up of a set of graphemes, each representing an element of language such as a complete word, a syllable, or a speech sound. Learning to spell in any orthography involves learning its graphic characters—their correct production in writing and the unit of language each represents. As we shall see, the ease with which an orthography is learned depends to a large extent on the unit of language that its graphic symbols represent.

The oldest type of orthography is represented by Chinese writing and by the Japanese orthography called kanji, which uses Chinese characters. In these writing systems, graphic characters represent entire words or concepts. In kanji, for example, the graphic symbol 人 ("man") together with the symbol 本 ("root") forms 体 or "root of man," which means *human body*. (In scribal practice, 人 is altered to 亻 when written beside another character.) Similarly, the character 人 plus the character 木 ("tree") forms 休 or "man resting by tree," which means *rest*. On holidays this is the character a shopkeeper places on the door to indicate the shop is closed (Walsh 1967, p. 56).

A principal advantage of this kind of writing, sometimes referred to as logographic or ideographic writing, is that the graphic symbols can be interpreted without reference to spoken language since they stand for ideas or concepts by themselves. For this reason, a Mandarin-speaking Chinese can communicate in writing with a Cantonese-speaking Chinese even though their spoken languages are different. On the other hand, logographic writing has a major disadvantage: thousands of characters are needed to convey concepts and the words of the language. Learning to read and write in such a system requires much time and effort; indeed, because of the difficulty in mastering the written language, literacy has been a mark of honor and respect throughout the course of Chinese civilization.

A second major type of writing system, the syllabary, is based directly on spoken language and uses graphic symbols to represent the syllables that form spoken words. Thus, combining the graphic characters that represent the spoken syllables of a word enables us to spell that word. Syllabaries are found mainly in languages with simple syllable structures; usually a single vowel, or a consonant and a vowel, forms a syllable. Spoken Japanese is such a language and, in addition to kanji, employs a syllabary called kana in its written language. There are two sets of kana, each containing forty-six graphic symbols. One set, hiragana, is used primarily to form grammatical endings. The second set, katakana, is used to write words adopted from other languages. For example, アメリカ stands for "ah may ri kah" or *America* (Walsh 1967, p. 119).

The advantage of syllabic writing over a writing system that uses symbols to convey whole words is, of course, the significant reduction in the number of written symbols that must be learned in order to read and write. There is a vast difference between learning 9,000 symbols used by Chinese scholars (out of 80,000!) and forty-six kana characters. Nonetheless, few syllabaries exist today because few languages have such simple syllabic structures. (An activity that introduces students to the syllabic writing system of the Cherokee is found on page 18.)

Alphabetic writing, the most highly developed and widespread system of writing in the world today, has proved to be much more convenient and adaptable to spoken language than has syllabic writing. Based on the notion that the separate speech sounds of a language, its phonemes, constitute the units that written symbols represent, alphabetic writing would, ideally, have a distinct symbol for each sound. A spoken language with forty speech sounds, for example, would have an alphabet of forty characters. The simplicity, adaptability, and suitability of alphabetic writing has secured its place as the predominant method of writing in the world today. The alphabet that was derived from the ancient Hebrews, Greeks, and Romans is now used not only in English but in French, Italian, German, Spanish, Turkish, Polish, Dutch, and Hungarian—to name a few of the languages that employ essentially the same alphabetic characters. (A class activity involving one of the simplest alphabetic writing systems, the one used in Hawaiian, is found on page 16.)

But what about the English language and its use of alphabetic writing? The answer to this question is of great importance in our consideration of the teaching of spelling. Let us begin by looking briefly at how English spelling has traditionally been viewed with respect to its allegiance to the alphabetic principle.

To the casual observer, English spelling is a puzzle. One of its problems, its detractors say, stems from the fact that its alphabet contains only twenty-six letters while the spoken language contains more than forty speech sounds. Moreover, many of its speech sounds are spelled in several ways, such as the "f" sound in *far, phone,* and *laugh* or the "ŭ" sound in *cut, tough, done,* and *blood.* That outspoken critic of English orthography George Bernard Shaw once pointed out that *fish* might just as reasonably be spelled *ghoti* because the "f" sound is spelled *gh* in *rough,* the "ĭ" sound is spelled *o* in *women,* and the "sh" sound is spelled *ti* in *nation.* From examples such as these, it is easy to see why

there have been many efforts to reform English spelling through the past several centuries, and why the most common practice in teaching spelling has been memorization. As we shall shortly discover, however, Shaw's parody of English spelling itself provides vivid evidence that the writing system is not as erratic as its surface features would indicate.

With the emergence of linguistic science in the twentieth century, a different view of English spelling was proposed, one in which the orthography was described as a flawed but patterned alphabetic writing system, whose errant ways had linguistic and historical explanations. One reason that English spelling does not adhere to the alphabetic principle, some language scholars maintained, is that spoken language changes over time while writing changes very little. As a result, the spelling of many words no longer reflects their pronunciation, for example, *one, two,* and *night.* A second reason, they pointed out, is that the spelling of some words was, for various reasons, changed by sixteenth- and seventeenth-century scribes and other scholars who, with the advent of the printing press, helped to establish English spellings, as in the spelling of *come, love, some,* and *wonder* with *o* instead of the older *u.* A third reason that English spelling appears to stray from its alphabetic base stems from the fact that the language has borrowed many words from other languages, sometimes retaining both the spelling and the pronunciation of the borrowed words, as in *parfait* and *sabotage* from the French, and in other cases changing the spelling and/or the pronunciation to fit English patterns, as in *medicine* from the Latin, *gymnasium* from the Greek, *volcano* from the Italian, and *mosquito* from the Spanish. Thus, as a result of these and other historical forces, present-day English spelling reflects an erosion of its alphabetic base.

The issue remained, however, concerning the extent to which the writing system had strayed from the alphabetic principle and, more important, what this deviation meant for spelling instruction. In response to these questions, linguists and educators interested in English spelling undertook new studies (Robert A. Hall, Jr., 1961; Paul R. Hanna et al. 1966). Let us look for a moment at one of these research efforts, the Stanford University Spelling Project, the basic premise of which was that English spelling is based on the alphabetic principle.

These researchers, headed by Paul Hanna of Stanford University, used computer technology to analyze the spelling of over 17,000 words to determine how individual speech sounds,

or phonemes, are spelled in different positions in the syllables of words. The number of different spellings of each phoneme was determined and the number of times each spelling of a given sound occurred in the 17,000 words was counted. The researchers were then able to rank the spellings of each phoneme from most frequent to least frequent and thereby determine which phonemes had "regular" graphic representation and which did not.

Using this information, the researchers developed a computer program that would spell the 17,000 words on the basis of phoneme-grapheme correspondence. The results were revealing. The computer correctly spelled over 8,000 words, or about 50 percent, misspelling another 37 percent of the words with only one incorrect phoneme-grapheme correspondence. Moreover, the misspellings could be explained when certain word-building and historical factors were taken into consideration. Hanna and his associates concluded that English spelling is less capricious than it appears and contains numerous systematic relationships between speech sounds and letters. Shaw's spelling of *fish* as *ghoti* could now be shown to demonstrate the basically rational nature of English orthography: while *gh* represents the "f" sound, it does so only at the ends of words such as *rough;* while *o* represents the "i" sound, the only word in which that spelling occurs is *women;* and while *ti* represents the "sh" sound, that spelling never ends a word and is found only in words that contain the suffix *-tion* as in *nation.*

The Stanford study attracted considerable attention, both favorable and unfavorable. To some observers, the fact that only 50 percent of the words were correctly spelled by the computer, even after applying many complex rules, demonstrated the irrational nature of English spelling. On the other hand, other observers recognized that, although focusing narrowly on phoneme-grapheme correspondence, the study verified the underlying systematic nature of English orthography.

A significant factor of English orthography, however, eluded the Stanford researchers; namely, that the appropriate unit of analysis in looking at English spelling is not phoneme-grapheme correspondences by themselves but how these correspondences are governed by the words in which they occur. Thus, while the researchers had demonstrated how adjacent sounds and letters influence each other (for example, that the final "j" sound of *fudge* is spelled *dge* because it follows a short vowel sound but is spelled *ge* in *huge* and *large* because these words contain other

kinds of vowel sounds), their study did not take into account that related words have related spellings despite sound changes (*sane* and *sanity; nation* and *national; derive, derivative,* and *derivation*); nor did it take into account such word-building factors as prefixes and suffixes.

Other scholars did take these factors into account, however. Richard Venezky, for example, although interested in how the pronunciations of words can be predicted from their written forms, established that English spelling patterns can be effectively described only when both phonological and word-building, or morphological, factors are taken into consideration (Venezky 1967). Noam Chomsky and Morris Hallé (1968) extended this position by asserting that the power of the English writing system lies in its disregard for irrelevant phonetic differences and its focus on the graphic identity of semantically related words *(derive, derivative, derivation).* The picture that emerges from these studies is one of a writing system that on the surface appears erratic and irregular but is at deeper and more abstract levels quite logical. Our writing system, in short, is not merely a reflection of speech sounds but of other language elements as well—word-building elements, syntax, and meaning.

Although theoretical views of English spelling and research into the nature of its structure are of interest primarily to researchers and scholars, this body of information has genuine significance for spelling instruction. As we are finding out, close parallels exist between what mature, efficient spellers know about the English writing system and what theoreticians and researchers have begun to unearth about that system. Let us turn, then, to a consideration of how spelling is learned.

Learning to Spell

Just as there have been recent significant advances in our understanding of the nature of English orthography, so have there been major advances in our understanding of how spoken and written language is learned.

The nineteenth-century psychologist William James once commented that we are born into a "kaleidoscopic flux of confusion" and that our basic task as human beings is to make sense of the world about us. Acquiring language is a dramatic example of how we accomplish that task. With the exception of those

with severe physical or mental impairment, each individual learns to speak relatively quickly. Within the first year, words are said, and often within the next year rudimentary sentences are produced. By the time children enter school, most show considerable facility with spoken language.

Although major questions remain to be answered about the process of language acquisition, important insights relevant to our examination of spelling have been achieved in recent years. One such insight is that learning to speak is in large measure a developmental process in which language concepts are formed, a process of accumulating generalizations about language through experiencing language. Thus, the acquisition of language is made possible because language is systematic, comprised of "rules" that determine how the sounds, words, and grammar of a language are produced and used to convey meaning. It is worth noting that we do not need linguists to tell us that language is systematic; each of us is well aware of the systematic nature of language, having gained that insight on our own in the first few years of life. A second insight about language learning is that the process is governed by general conditions of intellectual development and that the language displayed by a child at any given time is an expression of that development. A young child's language should not be regarded as inefficient adult language but as a manifestation of that child's model of language at that particular time. Children who say "foots" for "feet" and "hurted" for "hurt" are, in fact, providing eloquent evidence of their active search for the underlying language system. There are, in short, few if any random errors in the speech of children. Related to this observation is a third insight, that learning to speak requires numerous opportunities to be wrong. Errors provide comparisons for children to make with standard speech, enabling them to accommodate their own speech patterns over time to the language standards of the social environment in which they live.

Present research, of course, offers many other insights about the language development of children. For our purposes, however, evidence that language acquisition is an inexorable process in which children naturally and actively engage as they work out the "rules of the game" has important implications for learning to spell. For, as we shall see, there is great similarity between the processes involved in acquiring spoken language and those used to master written language. Children learn to talk by active involvement with the speech environment, an involvement that

engages them in identifying, classifying, and applying concepts about the "rules" of spoken language. So, too, does their written language development rely on many of the same intellectual strategies, strategies that develop with maturity and through experiences with the written language.

Only recently has spelling research begun to consider how young learners view the orthography. Instead, earlier studies tended to focus on such factors as the role and kinds of perception involved in learning to spell, the rate of learning, and, most often, comparisons between instructional methods (formal word study versus incidental learning, oral spelling versus silent spelling, test-study versus study-test approaches). Of late, however, researchers have begun to consider both the young learner and the nature of the orthography, and their findings suggest that the ability to spell is not a low-order memory task but is instead a highly complex and active intellectual accomplishment.

Since we are primarily interested in this discussion with the spelling ability of older students, we shall summarize only briefly the recent work concerning the spelling of young children. A more extended discussion of research concerning the beginning stages of spelling ability is found in *Learning to Spell,* the earlier TRIP publication.

One of the first major studies to examine the beginning attempts of children to spell was conducted by Charles Read, a linguist at the University of Wisconsin (Read 1971, 1975a, 1975b). Read looked at the ways in which children four to eight years old used their knowledge of English phonology to spell words. Among his subjects were approximately twenty preschoolers who were able to identify and name the letters of the alphabet and to relate the letter names to the sounds of words. These children then "invented" the spellings of words they wrote or constructed by arranging movable letters. Read found that even at an early age children are able to detect the phonetic characteristics of words that English spelling represents. More important to this discussion of spelling, however, was the observation that these young children, with minor variation, misspelled words in the same ways, for example, *bot* for *boat, fas* for *face, lade* for *lady*. Read's research revealed that even very young children try to make sense of the world around them by using available information, in this instance, applying their intuitive knowledge of the sound structure of English in order to spell words. In addition, Read demonstrated that the judgments of children

about relationships between speech and spelling are qualitatively different from those made by adults—that learning to spell, like learning to speak, is a developmental process.

Other researchers have since extended Read's investigations by looking systematically at the spelling of school-aged children. Among the substantive work in this field is that of a number of researchers at the University of Virginia under the direction of Edmund Henderson (Beers and Henderson 1977; Beers, Beers, and Grant 1977; Gentry 1978; Templeton 1979; Zutell 1979). In order to identify and describe the developmental stages of spelling ability, these researchers looked particularly at the kinds of errors children make in free-writing situations. What they found reinforces and extends our growing awareness that ability to spell is a complex intellectual and developmental achievement.

In 1977, James Beers and Edmund Henderson analyzed the spelling errors made by first-grade children over a six-month period and found that these young spellers went through three invariant stages as they developed strategies for spelling. In the first, they used a letter-name strategy in much the same way that Read's preschoolers had. In the second, they showed greater refinement in how they spelled vowel sounds, using letters to represent sounds other than the sounds that resembled letter names. In the third stage, they began to use information about features of the English writing system itself, for example, spelling *made* as *maed* or *hide* as *hied*, thus demonstrating an awareness of the final *e* and how it governs preceding vowels. These young spellers, then, did not lack phonetic knowledge in relation to alphabet letters, but they did lack knowledge about word structure, a knowledge that is gained only through experiences with writen language over time.

In a subsequent study (Beers, Beers, and Grant 1977) two hundred children in grades one through four were asked to spell a set of frequently used words and a set of infrequently used words in order to observe the spelling strategies they would employ. Here, as well, children systematically developed strategies based on their experiences with written language, reverting to simpler, more "primitive" strategies, such as assigning letters to words on the basis of letter names, when they were unfamiliar with a word.

These studies give added support to the contention that learning to spell is a developmental process that culminates in an understanding of English spelling rather than a simple knowledge

of relationships between speech sounds and their graphic representations. But what about the spelling strategies of older students? Let us turn to several recent examinations of spelling development among youngsters in later school years.

One such examination was undertaken by Shane Templeton (1979). To determine the extent to which knowledge of graphic structure contributes to spelling ability, he studied the abilities of sixth-, eighth-, and tenth-graders to construct and spell derived forms of real and nonsense words. Templeton found considerable evidence that spelling ability does not rely solely on skills for relating sound and spelling, nor upon rote memory. Rather, both phonological knowledge and visual knowledge about words are brought into play when older students spell, the visual knowledge having been acquired, of course, only from extensive prior experiences with written language.

Other evidence indicating that familiarity with the graphic structure of words is employed in spelling was found by Jacqueline Marino (1980), who studied the strategies used by sixth-grade students in a game (Word Mastermind) that requires players to make successive approximations toward identifying and spelling a target word. She found that better players used strategies involving a knowledge of letter frequencies and permissible letter patterns in English spelling and that these players were also the better spellers among the students in the study.

Other studies of the spelling development of older students disclose a developmental shift among better spellers from a reliance upon the phoneme-grapheme strategies used in the early school years toward a strategy of spelling words by analogy to other known words. Thus, while poorer spellers appear to stay with a phoneme-grapheme strategy when confronted with unfamiliar words, better spellers develop more effective strategies that incorporate a knowledge of spelling patterns in related words in order to spell unfamiliar words or words in which sound-letter relationships are insufficient or misleading. (See, for example, Juola, Schadler, Chabot, and McCaughey 1978; Marsh, Friedman, Welch, and Desberg 1980.)

In this same vein, I have observed the strategies of highly proficient ten- to fourteen-year-old spellers who compete yearly in regional "spelling bees." My observations reveal a number of interesting characteristics shared by these extraordinary young spellers. One observation is that these youngsters have a common interest in words generally, not merely in their spelling. A second

observation is that word meaning is a crucial element in spelling ability. Time and time again, contestants for whom a target word was not clearly remembered or about which they were unsure was correctly spelled when the word was given in sentence context or when a definition was provided. A third observation is that morphological (word-building) knowledge is a fundamental part of their spelling repertoire. Often, words whose meanings did not elicit a spelling were correctly spelled when information about their roots was provided. In these instances, many contestants were able to reconstruct the correct spelling of the target word on the basis of information about morphological factors reflected in the orthography, even though the word was not completely familiar. A fourth observation is that when the preceding clues failed to elicit a strategy for spelling an unfamiliar word, students resorted to the more primitive strategy of attempting to spell a target word on the basis of sound-letter clues, a practice that only occasionally resulted in a correct spelling.

Although an extensive research literature about the spelling ability of older students is only now emerging, studies such as the foregoing plainly indicate that for most people an ability to spell is a consequence of knowing about words in many guises—their visual or graphic characteristics, their phonological and structural (morphological) properties, and their meanings. These kinds of information enable spellers to develop generalizations about the English writing system that can be used in the spelling task, generalizations that have application to broad groups of words.

Implications for Instruction

What might we conclude about spelling instruction for older students from these linguistic and learning insights? For one, learning to spell involves learning about words and the interrelationships of components of words as these are reflected in the orthography. Because English orthography reflects language sometimes at the level of sound and at more abstract levels at other times, spelling instruction should not be restricted to a study of relationships between letters and sounds but should also entail a comprehensive study of the structural and semantic relationships of words. Consequently, learning to spell is not the exclusive province of spelling lessons. One learns to spell by having opportunities to generate useful "rules" about the written

language, an outcome that becomes possible only through a rich interaction with written language in numerous and varied settings. Every instance of writing and reading is a potential moment for learning more about the properties of English spelling.

A second conclusion is that spelling instruction and vocabulary instruction are two faces of the same coin, particularly for older students. Not only does a study of English spelling contribute to spelling ability, but the stability of English orthography makes it possible to explore other aspects of the language—such factors as meaning relationships among words derived from common Latin and Greek roots (activities on pages 32-33) and how the orthography retains the identity of semantically related words despite pronunciation differences (activities on pages 27-28).

A third conclusion is that individuals make few, if any, random spelling errors. Each incorrect spelling has a cause, whether from carelessness or from insufficient or erroneous knowledge about the written language. Spelling mistakes are, therefore, opportunities for teachers to assess the levels of understanding students have about the spelling system and for students to gain new knowledge about the orthography that may have application to other words.

Finally, as we noted in our opening discussion, some aspects of the orthography are probably best learned in later school years when the intellectual maturity of students and their greater range of experiences can be utilized. In this context, it can be argued that a proper goal of spelling study for older students is not only to learn to spell words correctly but to extend interest in and appreciation for the rich, complex fabric of language—its properties, uses, and historical development. In this light, the study of spelling is the study of language itself.

2 Practice

The earlier TRIP booklet *Learning to Spell* suggested that awareness—the mental quality of alertness and sensitivity—is a basic intellectual attribute of language acquisition. Out of awareness of forms and uses of language experienced in daily life children gain knowledge about the "rules" of language and how language works in human communication. This attribute is no less important for older students. For language learning is a lifelong venture, one in which written language plays a particularly important role. Every contact with written language affords not only an opportunity to learn more about the writing system we use—its structure and how words are spelled—but about the meanings and uses of words themselves. Learning to spell is learning about words—their meanings, forms, and uses in communication.

The following activities, then, are intended to foster word study by providing students with a variety of experiences in which to analyze, compare, and categorize written words. The value of these activities lies in their potential to promote inquiry into the nature and function of English orthography and to extend students' knowledge of this fundamental tool in human communication. Some of the activities draw upon a knowledge of the graphic structure of written words while others illustrate how words are often related in meaning and spelling. Still others foster an understanding of the origins and forms of English words. Finally, a set of activities provides opportunities for students to explore word meanings with dictionaries. As a matter of fact, nearly all of the games and activities that follow require or urge students to use dictionaries as arbiters in settling the meanings and spellings of words. Dictionaries are essential in word study and should be available in suitable quantity for class use. Collegiate dictionaries or others that include word origins are preferred.

Over fifty activities have been grouped under four headings: Exploring Word Forms and Letter Constraints; Seeing Relationships between and among Words; How New Words Enter the Language; and Dictionaries, Proofreading, and Meaning.

While these groupings are somewhat arbitrary, with some activities legitimately eligible for inclusion in categories other than the one in which they appear, the total set of activities should help students to explore, more fully understand, and appreciate English orthography as well as the rich tapestry of the English language itself.

Exploring Word Forms and Letter Constraints

The major function of English spelling is to convey language in graphic form. Among the first concepts to be mastered in the development of spelling ability are how the written code relates to spoken language and how the graphemes or letters of the orthography are used systematically to spell words. Here are activities that can help older students review and extend their understanding of the structure of English spelling.

1. We read on page 4 that an alphabetic writing system is based on a relationship between the graphic symbols, or graphemes, and the speech sounds, or phonemes, of a language. The Hawaiian language, a member of a family of Polynesian languages, has an almost consistent relationship between sounds and letters. Because of this consistency, Hawaiian spelling can be used to demonstrate the power of alphabetic writing in communication while at the same time providing students with an opportunity to become instant "speakers and writers" of another language. Here is what must be known in order to write and read Hawaiian.

First principle. Spoken Hawaiian has twelve basic speech sounds, seven consonants and five vowels, each with its own distinctive letter representation in written language. These are given below, with familiar English words to illustrate their sounds.

Consonants	Vowels
h as in *he*	*a* as in *father*
k as in *king*	*e* as in *they*
l as in *like*	*i* as in *ski*
m as in *man*	*o* as in *show*
n as in *now*	*u* as in *too*
p as in *pen*	
w as in *wet*	

(*W* is pronounced as a "v" sound when it is the next-to-last letter of a word. *Hawaii,* for example, is not pronounced with a "v" sound.)

Second principle. Every letter of a word stands for a sound; there are no "silent" letters. In accordance with this principle, *Hawaii* should be pronounced "hah-wah-ee-ee." In casual speech, however, adjoining vowel sounds are merged and usually pronounced as diphthongs ("hah-wiy-ee") or one of the sounds is dropped ("hah-wah-ee").

Third principle. A syllable is always made of a single vowel sound or a consonant and a following vowel. For example, *pua* ("blossom") has two syllables, *pu-a,* and is pronounced "poo-ah." The next-to-last syllable of a word is nearly always said with greatest stress: *mahalo* ("thank you") is pronounced "mah-hah-loh"; *paniolo* ("cowboy") is pronounced "pah-nee-oh-loh."

These three principles are all the information needed to speak, read, and spell Hawaiian. (But, do you *really* read Hawaiian if you don't know the meanings of the words?)

Here are some Hawaiian words and their meanings that you can pronounce for students to spell or for students to read and pronounce.

aa	"ah-ah"	(rough lava)
ala	"ah-lah"	(path, road)
kane	"kah-nay"	(man)
aikane	"ah-ee-kah-nay"	(close friend)
hale	"hah-lay"	(house)
lolo	"loh-loh"	(stupid, ignorant)
palapala	"pah-lah-pah-lah"	(printing, book)
ae	"ah-ay"	(yes)
moana	"moh-ah-nah"	(ocean)
wahine	"wah-he-nay"	(woman)
akamai	"ah-kah-mah-ee"	(wise, smart)
lanai	"lah-nah-ee" or "lah-niy"	(porch)
nani	"nah-nee"	(beautiful, splendorous, as *nani Hawaii*)
keiki	"kay-ee-key"	(child)
pehea	"pay-hay-ah"	(how)
pehea oe	"pay-hay-ah-oh-ay"	(How are you?)
maikai	"mah-ee-kah-ee" or "miy-kiy"	(I am fine; to be good, handsome)
kane maikai	"kah-nay-mah-ee-kah-ee"	(handsome man)
pololei	"poh-loh-lay-ee"	(correct, straight, upright)

hana	"hah-nah"	(work)
hana pololei	"hah-nah-poh-loh-lay-ee"	(Do your work correctly.)
wiki wiki	"wee-kee-wee-kee"	(hurry)
ukulele	"oo-koo-lay-lay"	(small guitar)

(Brought to Hawaii by the Portuguese, the instrument was named *ukulele* ("jumping fleas") by the Hawaiians from the manner in which the player's fingers flew over the strings.)

Here are some phrases to try.

Malama pono	(Be careful.)
Helemai	(Come here.)
Hauoli la hanau	(Happy birthday.)
Ua kaumaha au	(I am sorry.)
Mahalo nui loa	(Many thanks.)
Hola ehia keia?	(What time is it?)
Aloha ahiahi	(Good evening.)
Aloha kakahiaka	(Good morning.)
Hauoli Makahiki Hou	(Happy New Year.)
Hauoli maoli au	(I am happy.)
Aloha au ia oe	(I love you.)
Owai kou inoa?	(What is your name?)
Mele Kalikimaka	(Merry Christmas.)

And here is an ultimate test of your students' spelling ability in Hawaiian: *humuhumunukunukuapuaa,* the name of a little fish, pronounced "hoo-moo-hoo-moo-noo-koo-noo-koo-ah-poo-ah-ah"! Other words and phrases in this melodic language can be found in Hawaiian-English dictionaries.

2. Ask students to read in encyclopedias, biographies, and other sources the story of Sequoya(h), a Cherokee Indian (for whom the Sequoia tree is named), who single-handedly invented a syllabic writing system for his people. Sequoyah was convinced that the "white men's" power lay in their possession of written language, and he set out to bring this power to the Cherokee nation. After twelve years of work, during which he tried to develop, but dismissed, an ideographic writing system, Sequoyah produced in 1821 an eighty-six-character syllabary. Within three years, thousands of Cherokees had learned to read and write, a newspaper was created, and a constitution was written in the Cherokee syllabary.

3. Although based on the alphabetic principle, English spelling obviously does not employ alphabetic writing in the straightforward manner of Hawaiian; nor does it base spelling units on syllables as in the Cherokee writing system. Rather, our orthography relates letters with sounds and with other letters in systematic, though complex, ways in words.

Mathematically, the twenty-six letters of the alphabet can be combined over 4×10^{29} different ways; yet in the several hundred thousand words contained in unabridged dictionaries, only a relatively few letter combinations occur. The reason is that the letter patterns used in English spellings are established both by rules that determine the order of sounds in words and by rules that constrain the order of letters in writing those words. Most experienced writers and readers "know" these rules, or constraints, even though they are unlikely to be able to describe them. It is doubtful, for example, that you or your students would maintain that *txaor* is an English word, although *splim* might find acceptance.

Here is the top row of letters on a typewriter: *qwertyuiop.* Ask students to make as many words as possible from these letters. See who can make the longest word. Discuss the constraints that the absence of other letters imposes on forming words. Here is the second, or middle, row of letters: *asdfghjkl.* How many words can be formed using only these letters?

The intuitive knowledge of English spelling constraints is an important aid in spelling, and the remaining activities in this section focus on that aspect of English orthography.

4. The Hebrew alphabet contains twenty-two letters (five of which have different forms when they fall at the ends of words). The letters represent only consonants, and words are written from right to left. A system of small dots and dashes placed above and below the consonants was developed in the eighth century to indicate vowels, but these are now used mostly in schoolbooks, prayer books, and books for foreigners.

English spelling, of course, has vowel representations, and by changing vowels while retaining consonants, we can form different words: r____d, for example, is a consonant "frame" that can become *road, read, reed, rod, red,* and so on. Ask students to list words made by inserting different vowel spellings in m____t and d____r. Have them prepare other consonant frames, and see who can find the frame that generates the most words.

5. Even when the identity and position of vowel letters in words is not known, words often can be determined from information about their meanings and their letter sequences. For example, what state contains the consonant letter *h* and three vowel letters? What state has only the consonant letter *w* and three vowel letters? The answers are Ohio and Iowa.

Here are a few more puzzles of this kind. Ask students to use the clues to determine which words are meant. Missing vowel letters may be inserted between given consonants.

a state: *h, w,* and 4 vowel letters (Hawaii)

a vegetable that grows underground: *n, n,* and 3 vowel letters (onion)

a musical instrument (think Hawaiian!): *k, l, l,* and 4 vowel letters (ukulele)

a continent: *r, p,* and 4 vowel letters (Europe)

to unite: *j, n,* and 2 vowel letters (join)

an open space: *r* and 3 vowel letters (area)

Ask students to create word puzzles of this type for classmates to solve.

6. A linguist determined that of the 10,000 most used English words, 8,100 begin with a consonant or consonant cluster (as *pl* in *play*); yet, only sixty different consonants and clusters are used. Here are six activities in which students draw upon their knowledge of this constraint in order to spell words. In each activity, have students develop additional examples.

a. Add a consonant letter to the beginning of each of the following words to form another word:

link	(b, c, s, p)	latter	(c, f, p)
light	(b, p, s, f)	tumbler	(s)
teal	(s)	rack	(t, c)
luck	(p, c)	raise	(b, p)
lick	(c, f, s)	right	(b, f)
luster	(f, c, b)	resident	(p)
litter	(f, g)		

b. What single consonant letter can be added to each of the following words to form a new word? (answer: *t*)

error	reason
rip	ramp
roll	ravel
rap	rim
rite	witch
rain	wine
rend	will

c. Two-letter clusters can be added to some words to form other words. What words can be formed by adding two-letter consonant clusters to the following? (Answers are illustrative only; other possibilities exist.)

ail	(snail, trail)	ale	(stale)
aft	(craft)	ore	(score, store)
asp	(clasp, grasp)	ate	(slate, plate, grate)
ray	(spray, stray)	each	(preach)
ace	(place, trace, grace)		

As a variation, ask students to add one consonant letter at a time, each addition forming a new word: *ail* to *nail* to *snail.*

d. Insert a consonant letter after the initial consonant letter of the following words to form another word.

gum	(glum)	topics	(tropics)
bank	(blank)	sore	(swore, spore, store)
bide	(bride)	sung	(stung)
gill	(grill)	down	(drown)
sight	(slight)	beach	(breach, bleach)
sag	(swag)	seam	(steam)
back	(black)	bunt	(brunt, blunt)
fare	(flare)	fight	(fright, flight)
buff	(bluff)		

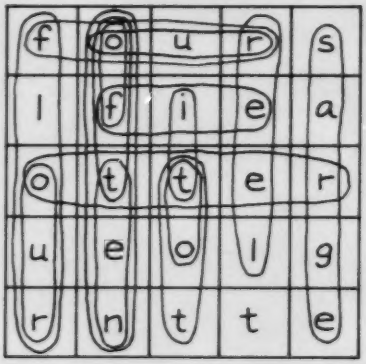
e. Develop an activity in which students determine the letter to be added to a word to form a new word by using a clue to meaning. Since initial letters are to be added, dictionaries can be used. Here are some examples:

__?__ + align = slander (malign)
__?__ + lithe = happy (blithe)
__?__ + roll = amusing (droll)
__?__ + light = difficulty, predicament (plight)
__?__ + raven = cowardly (craven)
__?__ + trident = harsh sounding (strident)

f. You and your students may have noticed that additions to words in the preceding five (a through e) activities result in words that rhyme. In fact, most rhyming words are merely words in which initial consonants and consonant clusters have been added, deleted, or replaced. Students may enjoy making up rhymes with words generated in these activities.

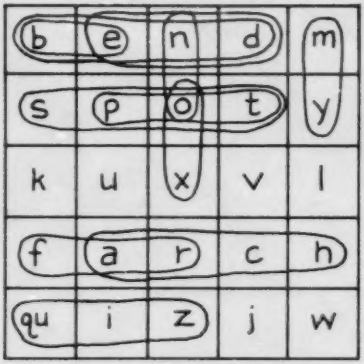
7. Word Squares, a game that requires players to observe letter sequences and letter relationships, works best when played by two players or in small groups. Duplicate sheets of paper on which you have drawn a square divided into twenty-five boxes, or ask students to prepare these. The square will resemble a bingo card. The opening player thinks of a word with five or fewer letters, writes that word either horizontally or vertically in the word square, and calls out a letter of that word (for example, *four,* calling out the letter *o*). Other players write that letter in any box of their squares. A second player then thinks of a word that can be built around that letter as it appears in his or her square, writes that word in his or her square, and calls out a letter of that word for other players to place in their squares. Turns are taken by the players until all boxes are filled or until no more words can be completed. Each word formed by a player scores a point, and the high scorer wins.

A completed card will resemble the example shown below, and students should not expect to be able to use all letters to advantage. The student who completed the card below, as indicated by the circled words, scored fifteen points, not counting plurals.

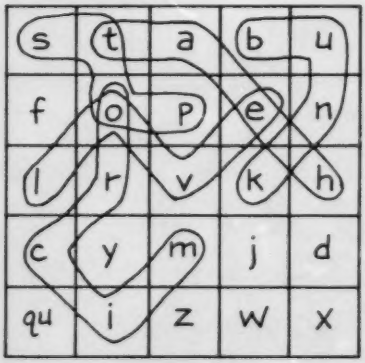


a. In a variation of this game, sometimes called "Five by Five," players call out, in turn and at a brisk pace, letters of the

alphabet, writing each letter in a box until all twenty-five boxes have been filled (*q* should be written as *qu*). The object is to find as many words as possible both horizontally and vertically. A time limit can be set, and the winner is the player who finds the most words. Players may challenge other players if they believe an opponent has misspelled a word or has written a nonsense word. The player who completed the word square shown below identified eleven words.



b. Another variation is to fill the squares with letters as above but to find words by using adjacent letters *in any direction*, horizontally, vertically, diagonally. (The commercial game *Boggle* is based on this tactic.) The player who completed the word square below identified forty-nine words, among them *tabu*, *story*, *tape*, *micro*, *flop*, *venue*, *stove*, *lope*, *cloven*, *love*, and *heap*. All word identifications are not shown.



8. Square Words, a version of Word Squares for advanced players, can be played individually or in small groups. Each player draws a square of sixteen boxes and writes a word across and down like this:

h	o	p	e
o			
p			
e			

The object is to complete the square with words that are spelled the same horizontally and vertically, for example:

h	o	p	e
o	v	e	r
p	e	e	r
e	r	r	s

Students can also prepare Square Words for others to complete. A more difficult version uses five-letter words and squares with twenty-five boxes.

9. Anagrams are words whose letters have been scrambled, sometimes to form other words. As a game, the object is to reproduce the original word. Anagrams are a simple, yet highly useful, type of wordplay for spelling because they provide opportunities to discover how permuting and combining relatively few letters produce a number of English words. Anagrams also draw attention to recurring letter patterns in English spelling. One interesting side benefit is that anagrams underscore the importance of word meaning in spelling. For example, if you are given these three scrambled words—*sinten, xbnoig,* and *loftsbal*—can you determine quickly the original words? If you know, however, that they are the names of three sports, will that help? Here are four examples of anagram activities that can be developed for class use.

a. Turn each of the following words into another word.

ache	(each)	finger	(fringe)
cause	(sauce)	hinge	(neigh)
girth	(right)	lilts	(still)
jaunt	(junta)	ought	(tough)
meteor	(remote)	quiet	(quite)
arid	(raid)	use	(sue)
cited	(edict)	sheet	(these)
hewn	(when)	vase	(save)
laces	(scale)	stripes	(persist)
night	(thing)	wider	(wired)
aside	(aides)		

b. The letters in each of the following words can be used to form two other words.

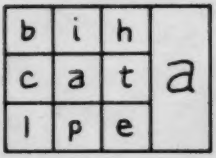
aids	(said, dais)	ales	(sale, seal)
angel	(angle, glean)	beard	(bread, bared)
lame	(male, meal)	below	(elbow, bowel)
tires	(tiers, tries)	paws	(wasp, swap)
pest	(step, pets)	pines	(spine, snipe)
earth	(heart, hater)	saint	(stain, satin)

c. Here the object is to form as many words as possible based on the "target" letters. Prepare a box as follows:

n	p	r	g	
s	t	h	d	ou
b	o	l	e	

Students are to find as many words as they can that contain the vowel spelling *ou*. For example, *loud*, *dough*, *rough*, and *tough*. Establish before they begin whether or not a letter may be used more than once in a word.

d. Choose any ten-letter word, such as *alphabetic*, selecting one of the letters as the letter upon which to form other words and prepare a box as follows:



The object, as in the preceding activity, is to form as many words as possible. A "super winner" is one who reconstructs the original word!

10. Palindromes are words or phrases whose spellings are the same forward and backward: *deed, Yreka Bakery, Able was I ere I saw Elba* (attributed to Napoleon Bonaparte!). Ask students to list words that are spelled the same forward and backward. Here are a few to get started.

deed	pep	tot
toot	eke	radar
peep	tenet	noon
redder	reviver	eve
rotator	deified	sees
dud	madam	mum

11. Reverse-a-Word (sometimes called Semordnilap!) asks students to discover words in which reversed spelling results in another word, as *pot* and *top*. The activity can be developed in order of difficulty, working first with three-letter words, then four-letter words, five-letter words, and so on. Here are a few examples:

three-letter reversals: *dog/god, dew/wed, pan/nap*

four-letter reversals: *bard/drab, golf/flog, snap/pans, mood/doom, stop/pots, gnat/tang, evil/live, part/trap, keel/leek, step/pets, plug/gulp, loop/pool, star/rats*

five-letter reversals: *lever/revel, smart/trams, straw/warts, devil/lived*

six-letter reversals: *denier/reined, leveler/relevel, spoons/snoops, sloops/spools, repaid/diaper, drawer/reward*

Seeing Relationships between and among Words

As we asserted in the opening chapter, "Theory and Research," the proper study of English spelling involves the study of words themselves—how they are formed and what they mean, in addition

to the sound patterns by which they are pronounced. Much of the stability of English orthography, in fact, is obscured if attention is given only to relationships between sounds and letters. Thus, while the preceding activities may foster a better understanding of sound-letter relationships and letter sequencing in words, spelling study ultimately must focus on helping students to see how the meanings and structures of words both influence and are reflected in the orthography.

The study of word forms most properly occurs in the later school years when students have had extensive formal and informal experiences with written language that can be drawn upon to examine in depth the word-forming patterns of the language—how roots, prefixes, and suffixes combine to create hundreds of thousands of words. As a matter of fact, it is with respect to word-formation that the most powerful orthographic "rules" can be brought to bear; for the structure of the orthography is such that related words are often recognizable by their spellings, even though they may be differently pronounced. In this section, then, we briefly describe word-building concepts and suggest activities that will help students explore relationships among words.

1. Many words are misspelled because vowel sounds in unstressed syllables are indistinct. Variant forms of these words in which the syllables are more fully stressed, however, often reveal the appropriate vowel spellings. For instance, what vowel letter, *e* or *o*, is contained in *maj___r*? In *maj___rity*? Here are other examples of how variant forms of words clarify the spelling of an obscure vowel sound. You might give a couple of examples in class and then encourage students to try to work out the rest.

e	o
manag___r, manag___rial	hist___ry, hist___rical
rem___dy, rem___dial	auth___r, auth___rity
arithm___tic, arithm___tical	cha___s, cha___tic
acad___my, acad___mic	cust___dy, cust___dian
coll___ge, coll___giate	econ___my, econ___mic
a	**u**
gramm___r, gramm___tical	ill___strate, ill___strative
decl___ration, decl___re	ind___stry, ind___strial
mir___cle, mir___culous	

Sometimes a shorter form of a word—in this instance the verb form—reveals the appropriate vowel spelling:

pres___dent	(preside)	comp___rable	(compare)
comp___sition	(compose)	cons___lation	(console)
comp___tent	(compete)	insp___ration	(inspire)

On the basis of these examples, encourage students to determine other words in which obscure vowel spellings become apparent when the words are compared with variant forms.

2. Sometimes a difficult consonant spelling is clarified when variant forms of a word are compared. In the following words, the missing consonant is one of the options in parentheses: *criti___ize (c, s); medi___ine (c, s); na___ion (t, sh); gra___ual (d, j); righ___eous (t, ch).* Here are variants of these words: *critic, medical, native, grade, right.* Notice how the latter words clarify the consonant spellings in question.

Help students to discover other words that follow similar patterns. For example, what related words will help to determine whether the "s" sound in these words is spelled *s* or *c*: *produ___e, redu___e, dedu___e*? A helpful clue lies in *production, reduction,* and *deduction.*

3. Some so-called "silent" letters are revealed to have sound value when variant forms of words are compared. Ask students to match the words in the first column with their variants in the second, noting how the underlined "silent" letters in words in column one do have a purpose.

muscle	bombard
bomb	soft
condemn	muscular
malign	signature
sign	malignant
soften	condemnation

4. A number of useful activities can be developed from the foregoing examples to focus attention on the fact that orthography often remains stable even when sounds change in related words. For example: "The Case of the Disappearing *V*." Ask students what happens to the second *v* in *revolve* when the word is changed to *revolution.* Have them try to think of other words in which *v* disappears when *-tion* is added. (Hint: most of the words rhyme with *revolve—solve, resolve, evolve, absolve.*)

5. As the preceding activities reveal, variant word forms are usually a consequence of adding and removing prefixes and suffixes. By school age, native speakers of English have a good command of the word-building (morphological) processes of the language. In fact, the "mistakes" that young children make in speaking show this to be the case. Their typical errors usually result from the overgeneralization of word-building patterns or from the misapplication of these patterns to words borrowed from other languages or to native words that do not conform to major morphological patterns.

The plural forms of most English words, for example, are produced by adding an "s" sound *(rake/rakes)*, a "z" sound *(shovel/shovels)*, or a syllable *(hose/hoses)*. When writing these plural forms, *s* is added to the noun in the first two instances, and *es* in the third instance, with the additional "rule" that only one *e* is used when *es* is added to words ending with *e*. Exceptions to these patterns are few in number, but fall into patterns of their own which you may want to discuss with your class. Ask students to contribute other examples of each exception below.

a. About a dozen nouns ending with *fe* are made plural by changing *f* to *v (knife/knives)*.

b. A few plural nouns result from an internal vowel change *(foot/feet)*.

c. The plural forms of some nouns (mainly names of animals and of nationalities) are the same as the singular *(moose, Chinese)*.

d. Three words from Old English are made plural by adding *(r)en (child/children)*. (Hint: one of the remaining words is an old plural form of *brother*.)

e. Some nouns borrowed from other languages, commonly from Latin and Greek, have plural forms in that language *(datum/data)*.

f. When the first part of a compound word is a noun, the plural form is usually a result of pluralizing the first but not the second part of the compound *(spoonful/spoonsful)*.

Ask students to determine, with dictionaries if needed, the plurals of the following words, categorizing them according to the foregoing "rules."

embryo	species	passerby
genus	phenomenon	larva
amoeba	bison	mosquito
taxi	beau	soprano
genius	goose	sheaf
axis	hero	criterion
ox	mongoose	inspector general
fox	alibi	staff
wolf	gallows	notary public
monkey	opus	hero
gross	deer	loaf

the years from 1980-1989, the nineteen _____

6. If you were to examine the 20,000 most used English words, you would find that about 5,000 of them contain prefixes and that 82 percent (about 4,100) of those words use one of only fourteen different prefixes out of all the available prefixes in the language. These fourteen prefixes and their meanings are listed here.

ab- (away from)
be- (on all sides, overly)
de- (reversal, undoing, downward)
dis-, dif- (not, reversal)
ex- (out of, former)
pre- (before)
re- (again, restore)
un- (do the opposite of)
ad- (to, toward)
com-, con-, co- (with, together)
en, em- (in, into, to cover or contain)
in- (into, not)
pro- (in favor of, before)
sub- (under, beneath)

Assign one of the above prefixes to students. In a given time period, say three minutes, ask them to write as many words as they can recall with that prefix. At the end of the time, the player with the most words reads his or her list as the others cancel those words on their lists. Players get five points for each word (correctly spelled, of course) that no one else has but lose two points for each wrong or misspelled word. A dictionary should be used as an arbiter. Here are a few examples.

ab-: absurd, abrupt, absolute, abase, abject, abduct, abhor, absent

com-, con-, co-: compare, collect, colleague, computer, combine, content, contract

de-: defer, defy, detain, derail, depart, depopulate

dis-, dif-: dismiss, disappear, disturb, differ

en-, em-: enlist, enslave, embody, employ, emphasize

7. Because of the phonetic structure of English, the final sounds of some prefixes are absorbed or "assimilated" into the word or root to which they are added. As a matter of fact, *assimilate* is an example of the process because the word is the result of *ad-* + *similate* (Latin *ad-* + *simulare,* "to make similar"). Early scribes, who established many spelling practices, doubled the spelling of the sound that "absorbed" the prefix sound in order to show in writing that the word contained a prefix; thus, *ad-* + *similate* became *assimilate* and *dis-* + *ficult* became *difficult.*

After explaining this process, provide students with the following prefixes and words or roots and ask them to determine the present-day word that has resulted from assimilation. A dictionary is a helpful resource, of course.

ad- + tend (attend)
ad- + fect (affect)
ad- + nex (annex)
ad- + proach (approach)
ad- + commodate (accommodate)
ad- + propriate (appropriate)
in- + rigate (irrigate)
in- + regular (irregular)
com- + rode (corrode)
com- + league (colleague)
sub- + port (support)
in- + migrate (immigrate)
in- + legible (illegible)
in- + resistible (irresistible)
dis- + ferent (different)

Here are a few more products of assimilation. Ask students to determine what the original prefix was in each of these words: *assemble, attract, collect, apprehend, aggrieve, assumption, supply, irritate.*

8. Ruminating on roots (A pun! *Ruminate* comes from Latin *ruminare,* "to chew.") is another useful habit. The vocabulary and spelling development of older students is augmented by the fact that they encounter many new words in textbooks and other instructional materials, words that often originate as Latin and Greek roots. You have probably noticed that many of the preceding activities involve words from these languages.

Just as a relatively small number of prefixes are used in English words, so are certain roots called upon to do a lot of work in the language. Here are a few of them:

meter (measure)
mit, miss (to send)
tel(e) (far)
duc(t) (to lead)
phon (sound)
scop(e) (view)
the(o) (god)
scrib, script (write)
pend (to hang)
graph, gram (write)
port (entrance, harbor, carry)
plic, ply (fold)
sign (sign, signal)
flec, flex (bend)
cred (believe)
chron, chrono (time)
flor (flower)
sens, sent (feel, be aware)

Here are a few activities that can be adapted to help students explore Latin and Greek roots from which many English words derive. Of course, dictionaries should be available.

a. Assign students a Latin or Greek root each week, one of the above or others that may have interest. Ask them to list words they know or can discover in texts and dictionaries that are formed from that root. Typical, but not exhaustive, lists are given below.

scrib/script: scribe, scribal, scribble, scribbler, script, scrip, scripture, conscript, nondescript, postscript, subscription, transcript, ascribe, circumscribe, conscribe, describe, indescribably, inscribe, prescribe, subscribe, superscribe,

transcribe, circumscription, conscription, description, descriptive, inscription, manuscript, prescription, prescriptive, proscription, transcription

gram/graph: telegraph, autograph, paragraph, biography, graphite, stenographer, monograph, typography, seismograph, heliograph, telegram, program, grammar

cred: credit, creditable, credulity, incredulous, discredit, credo, credence, accredit, credentials, credibility

b. Collect words from space technology, computer technology, and other technical areas, and ask students to sort them according to common roots.

c. Help students to "create" plausible words on the basis of root meanings. For example: *astrocraft*, meaning "spacecraft," or *telewaves*, meaning "far-off waves."

d. Ask students to list words they know or can find that are based on word elements that signify numeration. For example:

mono (monograph)	ses, sex (sextant)
bi (bicycle)	sep (September—seventh
tri (trident)	month of the Roman
qua(d) (quadrangle)	calendar)
pent (pentagon)	oct (octopus)
quin (quintet)	dec (decade)

9. Forming the plurals of nouns (page 29) was described as a form of suffixation. A second suffixing process enables roots and words to be used in different grammatical ways while still preserving a meaning relationship. *Fear* (a verb), for example, plus *-ful* (a suffix) forms *fearful* (an adjective). Here are some common suffixes and their basic meanings:

-able, -ible (can be done)
-ish (like)
-fy (to make)
-ment (result of)
-ism (belief in)
-let (little)
-ness (state of being)
-ory, -ery (where something is made or done)
-ward (in the direction of)
-ic, -ical (dealing with)
-ist (one who)

-ly (manner of)
-al, -ial (related to)
-less (without)
-logy (science of)
-or, -er (one who)

And here are some words that contain these suffixes:

justify	happily	foolish
pianist	droplet	biology
workable	musical	communism
observatory	fruitless	scenic
cautiously	conductor	sadness
bakery	skyward	baker
comical	radial	visible
accomplishment	anthropology	identical

Help students to discuss how the meanings of these words are influenced by their respective suffixes. Encourage students to supply additional examples.

Two important spelling rules are represented in this list of words. One is that no spelling change occurs when a suffix beginning with a consonant is added to a word or root that ends with a consonant (*droplet*). The second is that a final *e* or final *y* (standing here for a vowel sound) is dropped from a word or root when the added suffix begins with a vowel (*happily*). Notice also that some words are actually made of a suffix and a root that is not an English word by itself (*visible*). Ask students to find additional examples of each of these rules.

10. Write on the chalkboard or reproduce on paper the following columns of prefixes, roots, and suffixes. Ask students to construct as many words as they can by combining them. Have them check in dictionaries for the accuracy of their constructions and their spellings.

Prefixes	Roots	Suffixes
in-, im-	dic, dict	-ion
con-, com-	voc	-ive
pro-	duc, duct	-ator
per-	vert, vers	-able
de-	trac, tract	-ible
pre-	junc, junct	-er
re-	cep, cept	-or

ex-	spec, spect	-ation
trans-	cred	-ment
poly-	jec, ject	-fy

Advanced students who have had practice in word-building can develop this activity into a contest, setting a time during which players contribute as many words as possible. Words misspelled do not count.

How New Words Enter the Language

As the previous section illustrates, Latin and Greek were influential in the development of thousands of English words. But thousands of other words have entered the language in other ways. Learning how words enter the language is not only fascinating in its own right, it can contribute substantially to the further development of spoken and written vocabularies. It bears repeating that the study of spelling is the study of words themselves, and awareness of the origins of words we speak and spell helps us to understand both orthographic regularities and oddities.

Here, then, are activities that encourage students to explore other sources of English vocabulary. These activities are grouped according to four principal ways in which words enter the language: through grammatical and meaning changes of existing words, through structural modification, by creating new words, and by borrowing words from other languages.

Using Old Words in New Ways

We have already seen how the uses of roots and words are augmented by adding prefixes and suffixes. Two other ways of extending the uses of existing words are by combining words to form compounds with new meanings and by using existing words in semantically different ways. Many words in everyday use are a result of these two processes. The following activities will help students discover how old words are used in new ways.

1. Have students find in newspapers, magazines, and other sources examples of compound words that have recently entered the language. Many such words are a result of scientific and technological advances; others describe kinds of social behavior. Here are a few examples.

space age	coffee break	anchorman
moon shot	holdup	countdown
splashdown	backlash	overkill
sit-in	teach-in	hovercraft
turboprop	dropout	sea lab
cookout	spacecraft	wingspan
backup crew	wiretap	fallout
standby	monorail	free-fall

Ask students to add to this list and to categorize these compounds according to the scientific areas in which they are used. Unfortunately, there is no sure way to determine if compounds are written as single words, as hyphenated words, or as separate words. Generally, hyphenated compounds are used more often in British English, while compounds in very common use are written as single words.

2. Many common words came from the names of persons and places, or adaptations of them. A search into the origins of such words can complement instruction in school subjects other than spelling. Here are a few such words categorized according to the areas of study in which they are most likely to be encountered. Students can find the origins of these words in most collegiate dictionaries and in specialized dictionaries covering the etymologies, or origins, of words. Many more words can be added to each set.

Social Studies (history, politics, geography): lynch, atlas, gerrymander, maverick, boycott, hooligan, bayonet, bedlam, copper, gauze, laconic, romance, spaniel

Science: curie, volt, ohm, watt, decibel, galvanize, amp(ere), bunsen (burner), farenheit

Home Economics: mayonnaise, sandwich, weiner, frankfurter, hamburger, filbert, roquefort, loganberry, boysenberry, cardigan, cashmere, pants, levis, bikini, calico, millinery, mackintosh, stetson

Literature: calliope, mentor, mercury, nemesis, pander, herculean, jovial, odyssey, panic, tantalize, quixotic

3. Still more words have entered the language by the route of having originated in a special area of interest and then moving to more general usage. Terms originally used in sports and games are examples. Here are a few words of this type and their origins. Students should determine the meanings of unfamiliar words.

checkmate (chess, from Persian *shāh māt*, "the king is dead or unable to escape")
haggard (falconry)
full tilt (jousting)
bandy (tennis)
sidestep (boxing)
rub as in "There's the rub." (bowling)
four-flusher (poker)
allure (falconry)
fluke (billiards)
bias (bowling)
crestfallen (cockfighting)

Interested students may want to find other examples of more recent general terms that originated in sports.

4. What a word once meant is not necessarily what the word now means. Changes in the meanings of words are a result of a process called *semantic shift*. For example, *smug* once meant *neat* or *trim* and *virtue* once meant *manliness*; the key to these interesting changes can be found in a dictionary that gives word origins. Here are several other words, with their approximate older meanings; students will enjoy using a dictionary to trace these meaning shifts.

garble	(sift, select)	vulgar	(common people)
villain	(farm laborer)	varlet, knave, imp	(boy)
cloud	(rock, hill)	branch	(paw, claw)
guest	(stranger, enemy)	tragedy	(goat song)
puny	(born later)	bugle	(young ox)
slim	(crafty, bad, crooked)	school	(leisure)

Ask students to help you collect other examples of words that have undergone semantic shift. Slang terms count. They're really cool!

5. Doublets are two or more words derived by different routes of transmission from the same source. *Through* and *thorough* are examples. Ask students to look up the following doublets in dictionaries to compare their present meanings and to determine their common origins.

grammar/glamour
minister/monastery
antic/antique
frail/fragile

courtesy/curtsy	taint/tint
legal/loyal	ɹeward/regard
dike/ditch	guest/hostile
guardian/warden	dungeon/dominion
tavern/tabernacle	clench/clinch
human/humane	guard/ward

6. Another means of using certain words in other ways is to use them in another grammatical context, as a noun for a verb or vice versa. Sometimes called "shifties" in wordplay, these words do not change spelling, only their grammatical use. Here is one set of such words to share with your class. They have the unusual property of showing how shifting syllable stress is sometimes a function of grammatical class. The stressed syllable in each word is in capital letters. Notice that nouns are stressed on the first syllable, verbs on the second.

Noun	Verb
CONvert	conVERT
PERmit	perMIT
INvalid	inVALid
OBject	obJECT
SUBject	subJECT
EScort	esCORT
COMbine	comBINE
CONtract	conTRACT
PRESent	preSENT
COMpound	comPOUND
CONduct	conDUCT
PROtest	proTEST
INsult	inSULT
PROGress	proGRESS

Encourage students to contribute other words of this type. Be careful; for sometimes the words are not really related, as *wound* (injury) and *wound* (past tense of *wind*). Here are a few more shifties: *reject, recess, transfer, converse, consort, digest, console.*

7. A small set of words that have the same spelling but opposite or very different meanings gives rise to a word puzzle sometimes called "Autantonyms" in which the object is to determine word pairs of this kind. One example is *trim*, which can mean both "to take off something" (trim fat from meat) and "to add on to"

(trim a Christmas tree). Advanced students enjoy discovering other autantonyms; they should be reminded, however, that many are not truly opposite in meaning to the extent that antonyms such as *like* and *dislike* or *heavy* and *light* are. Here are a few to get started. Students should look up their meanings in a dictionary: *cleave, top, fast, seeded, overlook, dress.*

8. Homophones are words with different origins that are pronounced alike regardless of how they are spelled. *Bowl* (the game) and *bowl* (a dish) are homophones and so are *peer* and *pier.* Students must know the meanings of homophones that have different spellings if they are to write them correctly. *Bare, bear,* and *bear* is such an example in sentences like these:

The table couldn't _____ the weight and collapsed.

The boy wouldn't _____ his arm for the nurse.

The _____ climbed the tree.

Many homophones are not differently spelled, however. Here are some to share with students. Have them add others to the list.

bore	hold	rake	steep
keen	cow	fare	rear
saw	bank	jam	crab
punch	pulse	bully	lime
fair	slip	box	punt
perch	rag	rail	ring
can	fan	wear	fleet
down	shed	bark	calf
tip	bar	post	nail

Homophones are sources of many puns because word meanings change even though pronunciations don't. For example: A cattle rancher willed his ranch to his sons with the condition that the ranch be named FOCUS. Why? Because that's where the sons raise meat (sun's rays meet). Encourage students to collect and invent puns based upon homophones.

Modifying Word Structures to Form New Words

The preceding activities illustrate how existing words can be used in new ways without making structural changes. Other words enter the language, however, by modifying the structure of existing words in certain ways to form new words. Here are some activities based on this important source of words.

1. Sometimes the sounds and meanings of two or more words are merged to form a new word, as *motor + hotel = motel*. Technically called *portmanteau words*, they are often both fanciful and functional. Lewis Carroll of *Alice in Wonderland* fame provided, among others, *chortle (chuckle + snort)* and *slithy (slimy + lithe)*. Here are common words formed by telescoping or blending two words. Use dictionaries to determine the original words.

twirl (twist + whirl)
squawk (squall + squeak)
smog (smoke + fog)
broasted (broiled + roasted)
weeny (wee + tiny)
splatter (splash + spatter)
splotch (spot + blotch)
brunch (breakfast + lunch)
hassle (haggle + tussle)
dumbfound (dumb + confound)
flounder (founder + blunder)
clump (chunk + lump)
blurt (blow + spurt)
flurry (flutter + hurry)

Among the more recent additions are *heliport, simulcast, telethon, transistor, transceiver, quasar,* and *smaze*. What are their original words? How about *Medicare*? *Eurasia*?

Students enjoy inventing portmanteaus of their own. Ask them to combine words in the first column with words in the second to create new words. Then ask them to use the words in sentences.

free	+	ride	= (fride)
gawky	+	awkward	=
grand	+	dandy	=
stuffy	+	suffocate	=
squeeze	+	crunch	=

2. Clipping is a process in which a word is formed by shortening a longer one. Clipping occurs when the longer word has very common use and a shorter form results because it is simpler and as easily understood. *Bus,* for example, is a clipped form of *omnibus*. Here are some more: *pants* (pantaloons), *taxicab, taxi, cab* (taximeter cabriolet), *airlines* (airplane lines). And here is a list of clipped words that students can find in most dictionaries in order to determine their longer forebears:

phone	zoo	extra
flu	auto	ad
razz	photo	gym
gyp	bike	piano
cute	tend	divvy (up)
curio	mend	wig

Clippings are often used in informal speech or slang and may not always appear in a dictionary. Ask students to find out which of the following appear in a dictionary and to determine the original words: *lab, exam, math, econ, trig, sax, fan, prefab, cinema, shake, perk.*

Here are some longer words. What is the clipping of each?

brandywine	defend	hackney
caravan	veteran	dormitory
professor	estate	penitentiary
abet	turnpike	referee
communist	estrange	despite

3. The word pair *edit* and *editor* illustrates another kind of structural change: back formation. Ordinarily, one would expect that *editor* (one who edits) developed from *edit,* in the same way that *farmer* stems from *farm, worker* from *work,* and so on. The fact of the matter is that *editor* appeared first in the language and *edit* was created from it. There are not a lot of back formations in the language, but here are a few common ones that you can discuss with your students. The original word is provided in parentheses:

typewrite (typewriter)	baby-sit (baby-sitter)
resurrect (resurrection)	enthuse (enthusiasm)
beg (beggar)	rove (rover)
jell (jelly)	launder (laundry)
pea (pease)	

Coining New Words

1. Some words are pure creations of writers, inventors, scientists, and others who are in need of a term to express a given meaning or to name an item or product. These words are called coinages or root creations. Here are a few words in common use that originated as names of products or trade names.

kodak	nylon	dacron
orlon	aspirin	kerosene

cellophane	vaseline	kleenex
zipper	dictaphone	band-aid

And here are a few words created to express a meaning:

goop	spoof	boondoggle
blurb	pandemonium	scalawag
gobbledygook	googol (1 followed by 100 zeros)	

Two related activities that students enjoy are examining newspapers, magazines, and other popular written materials for additional trade names and coining new words for common objects and activities.

2. Yet another means of generating words is by making acronyms ("tip names") from the initial letters of words in phrases. *NASA* (National Aeronautics and Space Administration) is a recent example. Acronyms are either pronounced as words, as in the case of *NASA*, or as letter names, as in the case of *YMCA*, which is often shortened even further to *Y*. Here are a number of common acronyms to share with students. You might begin by providing the phrase first and asking students to determine the acronym; then reverse the procedure, offering the acronym first and then asking for the phrase.

CORE (Congress of Racial Equality)

radar (radio detecting and ranging)

laser (light amplification by stimulated emission of radiation)

UNESCO (United Nations Educational, Scientific, and Cultural Organization)

sonar (sound navigation and ranging)

Comsat (Communication Satellite Corporation)

emcee or M.C. (master of ceremonies)

veep or V.P. (vice president)

scuba (self-contained underwater breathing apparatus)

DNA (deoxyribonucleic acid)

GOP (Grand Old Party, Republican Party)

COD (cash on delivery)

pj's (pajamas)

Gestapo (*Geheime Staats Polizei*, "secret state police")

And the most common acronym of all: *okay* or *OK* (possibly from the O.K. Club or Old Kinderhook Club, a political club of Democrats in the 1840s, named after President Martin Van Buren, whose nickname was Old Kinderhook.)

As students will see, acronyms often name political, industrial, and social organizations. As an additional activity, students might invent organizations whose names result in interesting acronyms. For example, *ACCEPT,* a possible name for a support organization: Adult Child Caring for Elderly Parent.

3. Many more words have entered the language as a consequence of word creations that seem to sound like an action or event. These "echo," or onomatopoeic, words are a rich source of word study in spelling because the sounds of the spoken words and their spellings usually conform closely to major spoken and written language patterns. Here are a number of these fascinating words:

bang	burp	splash
tinkle	ping	bobwhite
cuckoo	bump	flick
meow	moo	twitter
gargle	whiz	crunch
bash	slurp	gulp
boom	fizz	hiss
sizzle	giggle	zoom
plink	yip	swish
whinny	wham	pow
buzz	bobolink	hum
screech	clink	whippoorwill

To learn more about this form of word creation, students might try their hands at creating words the sounds of which seem directly to imitate or echo an action or event. Here are a few suggestions that might be demonstrated so that students hear the sound they are about to name: chalk screeching on a chalkboard, cloth ripping, a ball bouncing down stairs, glass breaking, a door blowing shut, a pencil being sharpened, air escaping from a balloon, someone typing, a rubber band being snapped, a sheet of paper being crumpled.

If cassette recorders are available, ask students to record sounds at home, at school, and in the neighborhood and to play them back for the class to identify and to name. Students should also determine how these new words are to be spelled.

Students will also enjoy making posters or a bulletin board display of echoic words collected from comic strips. Another successful activity is to ask small groups of students to select a category such as noises made by animals, by machines, by falling objects, and to list as many echoic words as they can for that category.

Borrowing Words from Other Languages

Word study can go far beyond the meanings, structures, and spellings of words. It can be an entrée into the social and political history of the English-speaking world. The richness and diversity of the language are in large part the result of contacts with other cultures and societies from whom we have borrowed concepts and material goods, along with their names. These "loan" words (actually on permanent loan!) permeate the language. Sometimes the original spelling is maintained; in other cases, the word is adapted to English spelling.

The scope of this booklet precludes examining the many languages and the thousands of words that have entered our language from them. Here, however, is a sampling of words borrowed from other languages that illustrates how in every language contact the potential exists for adding words to the English vocabulary. Here, then, is a "hodgepodge" of borrowed words:

Russian: tundra, czar
Portuguese: molasses, fetish
German: strafe, kindergarten
Spanish: bonanza, rodeo
Italian: virtuoso, carnival
Hindi: shampoo, chit
Japanese: hibachi, tycoon
Chinese: tea, serge
Hebrew: sabbath, jubilee
Persian/Iranian: azure, shawl
Yiddish: kibitzer, phooey
Afrikaans: trek, commando
Arabic: safari, zero
Malay: amok (amuk), gingham
Polynesian: atoll, tattoo, bamboo
Louisiana Creole: lagniappe

Encourage students to contribute words from these and other languages. An interesting follow-up is to provide a large world map and have students place words in relation to country of origin. Replace these words with new words from time to time.

Dictionaries, Proofreading, and Meaning

As can be inferred from the preceding activities, dictionaries are crucial instructional resources in spelling and vocabulary study. They are the supreme court of a language in deciding correct spelling. In this role, they should be constant companions for those who wish seriously to attend to the quality of their spelling. Dictionaries are the depository of the language itself and are natural reference points for any examination of the forms and meanings of words. As pointed out in the opening chapter on theory and research, the meanings of words cannot be divorced from their spellings; and spelling instruction must foster this relationship, not its separation. The following activities suggest ways in which students can inquire further into spelling-meaning relationships and put the knowledge gained into practice.

1. Proofreading includes the ability to recognize correct and incorrect spellings of words and is an essential tool in the toolbox of good spellers. Games such as Word Find are based on arrays of letters in which target words can be found by locating in any direction their contiguous letters. Such games are excellent means of sharpening word recognition skills because they depend upon players seeing and spelling embedded words. A word-find array can be prepared by you or by students for any set of words being studied. Here is a Word Find containing the names of five sports.

t	s	o	c	c	e	r	b
t	f	o	r	m	l	o	f
x	a	l	s	s	u	r	t
b	h	o	c	k	e	y	v
d	a	p	e	i	p	u	o
i	k	o	h	i	z	i	w
u	t	e	n	n	i	s	q
l	o	p	i	g	r	l	w

Boggle, a commercially available game, presents an array of 16 (sometimes 25) letters. Players find as many words as possible in that array within a given time. Words can be formed by connecting contiguous letters in any direction, but a letter in a box can be used only once in any single word. Versions of *Boggle* can be prepared by you and your students by randomly selecting letters to place in the array (be sure to provide a few vowel letters). How many words can you find in this array in three minutes? For example: *not, note, notes, mild, lime, ram, ten, dime, far.*

r	a	l	i
i	f	m	d
t	n	e	s
w	o	t	p

A dictionary should be handy to settle disputes about the legality of words and their spellings. As an aid to vocabulary development, students, if challenged, can be required to define any word they find. When *Boggle* is played by two or more players, each player's list is compared to those of others and all duplicate words or incorrect words are canceled. The winner is the player with the most remaining words.

2. Develop a class thesaurus. Discuss words that seem to be overused in class writing. Develop a list of alternative words that more accurately express the intent of the writer. For example, the bland word *say* might be replaced in certain contexts with *murmur, yell, cry, state, whisper, shout, laugh, rage.*

3. Ask students to substitute the correct word for an incorrectly used word in the following sentences:

> He's not legible [eligible] for the army.
>
> The speaker was suffering from allusions [illusions] of grandeur.

Students enjoy writing similar sentences for others to correct. Here are a few frequently confused pairs of words that can be used in this activity. Others, of course, will come to mind.

dual/duel	weather/whether
formerly/formally	stationary/stationery
accept/except	compliment/complement
angle/angel	cavalry/calvary
persecute/prosecute	respectfully/respectively
precede/proceed	arraign/arrange

4. Help your class to develop a *Guinness Book of Word Records,* a collection of words that are unusual in spelling, meaning, or form. Here are some examples to get you started:

a. A word spelled with five consecutive vowel letters *(queueing)*

b. A word with five *e's* and no other vowel letters *(effervescence)*

c. Meaningful word-pairs formed by anagramming one of the words of the pair (for example, *latent* and *talent*)

d. The longest word in the language (*floccinaucinihilipilification*, at least it's the longest word in the *Oxford Dictionary*)

5. To play "I Doubt It," one of the great vocabulary-building games, students select words from the dictionary that are likely to be unknown to others. Each word is written on a separate card along with its correct definition. A word is displayed and each student writes on a card that word and a definition he or she believes to be accurate. The cards are then shuffled and each definition is read aloud or displayed for others to see. The object is to determine the correct definition.

6. Using dictionaries, determine the origins of words that now have roughly synonymous meanings. The result can vividly demonstrate the diversity of word origins in English. For example, consider the origins of *trivial, paltry, picayune, trifling,* and *petty.*

trivial: from *trivium,* a place where three streets meet, a public square; hence, that which comes from the street

paltry: dialectal English for *palt, pelt,* meaning rags or rubbish

picayune: a small French copper coin, a Spanish-English half real, a nickel

trifling: from Middle English *trifle* or *truf(f)les,* from Old French *trickery*

petty: from Middle English *pety,* small; a variant of *petite*

7. Ask students to classify adjectives according to the sensory mode they describe. For example:

tactile: soft, smooth, even, hard, rough, harsh, coarse, dry, sharp, hot, cold, warm, cool, heavy, light

taste and smell: piquant, pungent, tart, bitter, acrid, sweet, sour, tangy, salty

visual (dimensions): high, low, thick, thin, deep, shallow, wide, broad, narrow, full, big, little, flat, steep, small, level

visual (color): clear, bright, light, brilliant, fair, dark, dim, faint, pale, cloudy

aural: quiet, loud, shrill, strident

Encourage students to note adjectives that apply to more than one sensory mode, for example: *sharp* (tactile, taste, aural, visual).

8. Euphemisms are inoffensive ways of stating something that might be offensive to others. "Your face would stop a clock" might be rendered euphemistically as "Everytime I look at you, time stands still" (Shipley 1972, p. 75).

Ask students to write sentences that convey the concepts represented by the following words, without using the words themselves.

shrewd	sarcastic	stupid
garrulous	stingy	pigheaded
greedy	dull	hotheaded
cunning	weak-willed	impudent
conceited	timid	lazy

9. Ask students to find pairs of words that are commonly used together in a phrase, for example: *kith and kin.* Discuss why these word-pairs are so closely associated, using dictionaries to substantiate the reasons. Each word of the pair may need to be looked up separately. Here are several more: *spick and span, null and void, flotsam and jetsam, assault and battery.*

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Selected Bibliography for Teachers and Students

The achievement of spelling ability is the outgrowth of numerous and sustained involvements with our written language along with a sense of pleasure and satisfaction from that involvement. The games and activities we have discussed can help to bring about that involvement and will suggest other experiences with spelling that students will enjoy. Books that provide additional information about learning to spell and describe many more activities for classroom and individual use are listed below as are commercial games that foster a growing knowledge about English words and their spellings.

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Commercial Games

Boggle. Parker Brothers.

Big Boggle. Parker Brothers.

Probe. Parker Brothers

Scrabble. Selchow and Righter Co.

Scrabble/Dominoes. Selchow and Righter Co.

Scrabble Scoring Anagrams. Selchow and Righter Co.

Scrabble Sensor (electronic word game). Selchow and Righter Co.

Speak and Spell (electronic word game). Texas Instruments.

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